

**INFORMATION TECHNOLOGY
INTERIM EXAMINATION**

TIME: 1 ½ HOURS

WRITE COMPLETE SENTENCES IN ANSWERING ALL QUESTIONS

1. Give two (2) reasons why someone might join a newsgroup.
 - a. Explain the major difference between **internet relay chat** and **electronic mail**.
 - b. Give the meanings of the following abbreviations, and for EACH case, explain their purpose:
 - i. HTML
 - ii. FTP
 - iii. CADD

(10 marks)

2. A 12-bit register is to be used to hold integers using the two's complement system of representation.
 - a. State the largest and smallest positive whole number representation.
 - b. State the largest and smallest negative whole number representation.

(4 marks)
 - c. Convert the following:
 - i. The binary number 11.011 to decimal
 - ii. 155_2 to decimal
 - iii. 109_{10} to binary

(4 marks)
 - d. What is the result of adding 00110101 and 11001011 using 8-bit two's complement integer arithmetic?

(2 marks)
 - e. Write the following decimal integers in sign-and-magnitude representation using 8-bits
 - i. 9
 - ii. -9

(4 marks)

3. Identify each of the following languages as first, second, third or fourth generation language:
 - a. Pascal and Structured language;
 - b. 6800 assembly language;
 - c. Structured Query Language;
 - d. FORTRAN and COBOL.

(Total 2 marks)

4. Explain the differences between the following:
 - a. Logic Error and Syntax Error;
 - b. Source Code and Object;
 - c. Read and Write;
 - d. Machine language and Assembly Code

(8 marks)

5. Briefly describe how the following types of printers generate hard copy output:
 - a. Dot-matrix
 - b. Thermal
 - c. Ink-jet
 - d. Laser

(4 marks)

6. Write algorithm using pseudo code to do the following sequence of tasks:
- Read in two values;
 - Multiply both values by the number 10 and add the results;
 - Square both values and add the squares;
 - Check if the answer to (b) is greater than the answer to (c);
 - If the question c answer is greater, print a statement indicating that “The squares have won”. If the question b answer is greater, print a statement indicating that “The Products have produced a win”. **(Total 8 marks)**
7. i. Give the difference between “custom software” and “customized software”.
 ii. What is the difference between a command-line interface and a graphical-user interface?
 iii. List TWO advantages of an integrated software package over a collection of separate applications packages running under a common operating environment.
 iii. In handling diskettes, one precaution is “Keep diskettes away from liquids”. Give THREE further precautions to be taken in handling of diskettes. **(9 marks)**
8. List TWO advantages of secondary storage for long term storage of data, as compared to using the computer’s main memory. **(2 marks)**

(b) Match the letters in the paragraph to the “List of Terms” to complete the paragraphs.

LIST OF TERMS (Some or all may be used) arithmetic and logic unit, backing store, control unit, cylinders, heads, internal memory, program, sectors, tracks.

In order to execute a (A)_____ which is stored on the computer, the computer must read the instructions from its(B)_____ in to its (C)_____. The (D)_____ then picks each instruction in turn, passing any mathematical or logic operations over to the (E)_____ until the entire sequence are completed. **(4 marks)**

The data stored on a high density 3 ½ inch diskette is arranged in 80 circular (F)_____ forming rings on the surface of the disk. Each ring is divided into 18 (G)_____ having ½ K-byte each. A hard disk has multiple surfaces. The corresponding rings on those surfaces are directly above and below each other. On a hard disk, these rings, one above the other, are said to form (H)_____. **(2 marks)**